NEW DISTRIBUTION AND HABITAT DATA FOR THE VULNERABLE PYGOPODID, *DELMA TORQUATA* (KLUGE, 1974)

BARNEY M. HINES, DAVID HANNAH, MELANIE VENZ AND TERESA EYRE

Hines, B.M., Hannah, D., Venz, M. & Eyre, T. 2000 06 30: New distribution and habitat data for the vulnerable pygopodid, *Delma torquata* (Kluge, 1974). *Memoirs of the Queensland Museum* **45**(2): 391-393, Brisbane. ISSN 0079-8835.

The vulnerable pygopodid, *Delma torquata* (Kluge, 1974), has been regarded as confined to scattered localities in southeastern Queensland. Here we report on the first two instances for this species occurring in the southern section of Queensland's Brigalow Belt Bioregion. In addition, the habitat at two new localities, Bunya Mountains and Western Creek are different from others in which *D. torquata* has been recorded. ❐ *Delma torquata, pygopodid, distribution, habitat, Brigalow Belt Bioregion.*

Barney M. Hines, P.O. Box 7, Point Lookout 4183; David Hannah, Queensland Parks and Wildlife Service, PO Box 906, Emerald 4720; Melanie Venz, 49 Ellerslie Cr, Taringa 4068; Teresa Eyre, FERA, Dept of Natural Resources, 80 Meiers Rd, Indooroopilly 4075, Australia; 14 September 1999.

Delma torquata has been regarded as confined to scattered localities in southeastern Queensland (e.g. Kluge, 1974; Davidson, 1993; McFarland, 1999; Queensland Museum records), in the area between Ulam (23°35'S, 150°36'E) near Rockhampton, the Bunya Mountains (26°52'S, 151°14'E) and Brisbane's western suburbs (27°31'S, 152°58'E). Recent systematic vertebrate fauna surveys on public lands in southern Queensland (e.g. Eyre et al., 1999) have extended the known range of this species northwest to Blackdown Tableland and inland to Western Creek. These are the first two records for this species in the southern section of Queensland's Brigalow Belt Bioregion (BBB), an area seriously assailed by land-clearing (Young et al., 1999).

Blackdown Tableland National Park (23°48'58"S, 149°10'56"E) is an isolated sandstone plateau some 200km west of Gladstone (23°51'S, 151°14'E). Here, a specimen of *D. torquata* was captured in a pitfall trap by T. Eyre, M. Schulz, G. Ford and M. Mathieson on 29 November, 1997. It was photographed and released (QM slide # NW438 QM). At Western Creek State Forest (28°04'37"S, 150°53'57"E), an area of rolling sandstone hills near Millmerran, an adult *D. torquata* was hand captured by M. Venz on 3 October 1998. This specimen was lodged with the Queensland Museum (J66808).

Five additional specimens of *D. torquata* were found during these surveys. On the 19 June, 1997, two *D. torquata* were hand-captured by B. Hines and A. Fletcher at Grongah State Forest (25°58'02"S, 152°05'17"E), via Kilkivan. One was lodged with the Queensland Museum (J63361), the other released after tissues were taken for genetic studies (University of Queensland, Molecular Zoology Laboratory, vial number QRFA043). On 19 September 1997, a single specimen of *D. torquata* was similarly captured by D. Hannah in Yarraman State Forest (26°52'51"S, 151°50'12"E). The identification of this species was confirmed by Queensland Museum staff. It was photographed (QM transparency NV 739-761) and released at the capture site. A fourth *D. torquata* specimen, hand captured by B. Hines and I. Gynther at Bunya Mountains State Forest (26°49'35"S, 151°35'46"E) on 30 April 1998, was released following tissue sampling (University of Queensland, vial number QRFA256). Lastly, a specimen of *D. torquata* was collected by Queensland National Parks and Wildlife staff during a fauna survey of Bullyard Conservation Park (24°57'59"S, 152°03'06"E), near Gin Gin, on 26 February 1997. This specimen was also lodged with the Queensland Museum (J67859).

The identification of animals at four of the six localities was confirmed with voucher specimens registered at the Queensland Museum. Identification at the other two localities, (Blackdown Tableland and Bunya Mountains), was confirmed by multiple observers at each site, with two observers in each case having prior, first-hand experience in identifying this species (i.e. MM and MS; BH and IG). In each example, the pattern and scalation of the individuals were consistent with that described in Cogger (1996).

The Western Creek and Blackdown localities are significant as they are outside the Southeast

Queensland Bioregion (SEQB), in the southern section of the BBB. The only other record for this species from outside the SEQB is of a hatchling, collected in 1943 at Ulam (Kluge, 1974), in the northern section of the BBB.

HABITAT

Habitat features of the localities described in this paper vary to that documented elsewhere. For example, Wilson & Knowles (1988) report *D. torquata* as an inhabitant of eucalypt/acacia woodland usually associated with rocky outcrops on ridges. This description is comparable to the Blackdown Tableland, Grongah and Yarraman localities, which support narrow-leafed ironbark (*Eucalyptus crebra*) open forest with grassy understoreys on ridges. It is also similar to the site where Porter (1998) conducted the only detailed investigations into the ecology of *D. torquata*. In contrast, the Bunya Mountains and Western Creek sites are different from others in which *D. torquata* occurs. The former supports forest red gum (*E. tereticornis*) woodland, while the latter is an area of brigalow (*Acacia harpophylla*) and belah (*Casuarina cristata*) forest with a wilga (*Geijera parviflora*) dominated midstorey. Both sites are in low lying areas.

Differences were also noted in soil type. At Porter's (1998) *D. torquata* study site soils are shallow, stony lithosols on ridges and texture contrast soils on slopes. In contrast, those at Western Creek are fine-grained, grey, cracking clay sediments, while those at the remaining sites are dark-brown to black cracking clays of various depths. In addition, most of the specimens captured by Porter (1998) were sheltering under stones. However, his results indicated that rock may not be a necessary component of *D. torquata* habitat, as some individuals were captured in pitfall traps set away from rock cover. Neither the Western Creek nor the Yarraman sites contained significant rock components.

CONSERVATION STATUS

A review of known localities for *D. torquata* indicates that its current status is justified. *D. torquata* is listed as vulnerable in both The Action Plan for Australian Reptiles (Cogger et al., 1993) and under the Queensland Nature Conservation (Wildlife) Regulation 1994. The discovery of this species at additional sites indicates that it is more widespread than has been surmised. However, many of the localities in the western suburbs of Brisbane are threatened by urban development (Czechura & Covacevich, 1985; McDonald et al., 1991). In addition, of the six new localities discussed here, three are in communities considered either 'vulnerable'or 'endangered' (Table 1) (Young, 1999; Young et al., 1999). These findings highlight the need for further research into the biology and conservation requirements of this species.

ACKNOWLEDGEMENTS

We thank the field and office staff involved in the fauna component of the Comprehensive Regional Assessment program in southern Queensland; Jeanette Covacevich and Patrick Couper of the Queensland Museum for assistance with the preparation of this paper; the Queensland Dept of Environment and Heritage, the Queensland Dept of Natural Resources and Environment Australia which funded the surveys on which these specimens were recorded. In addition, we thank Queensland National Parks and Wildlife Service staff Paul Horton, Adrian Kampf and Steve Clark for the Bullyard CP specimen and John Hodgon for information regarding this record.

LITERATURE CITED

COGGER, H.G. 1996. Reptiles and Amphibians of Australia. 5th Edition. (Reed Books: Sydney).

COGGER, H., CAMERON, E., SADLIER, R. & EGGLER, P. 1993. The Action Plan for Australian Reptiles. (Australian Nature Conservation Agency: Canberra).

CZECHURA, G.V. & COVACEVICH, J. 1985. Poorly known reptiles in Queensland. Pp. 471-476. In Grigg, G., SHINE, R. & EHMANN, H. (eds) Biology of Australasian frogs and reptiles. (Surrey Beatty & Sons: Chipping Norton).

DAVIDSON, C. 1993. Recovery Plan for the Collared Legless Lizard (*D. torquata*). ANCA Endangered Species Programme. Unpubl. report to Queensland Department of Environment and Heritage.

EYRE, T., KRIEGER, G., VENZ, M., HASELER, M., HINES, B. & HANNAH, D. 1999. Systematic Vertebrate Fauna Survey Project. Stage I – Vertebrate Fauna Survey in the South East Queensland Bioregion. Unpubl. report to the Queensland CRA/RFA Steering Committee by the Department of Environment and Heritage, Brisbane.

KLUGE, A.G. 1974. Taxonomic revision of the lizard family Pygopodidae. Miscellaneous Publication of the Museum of Zoology, University of Michigan No. 147.

McDONALD, K.R., COVACEVICH, J.A., INGRAM, G.J. & COUPER, P.J. 1991. The status of frogs and reptiles. Pp. 338-345. In Ingram, G.J. & Raven, R.J. (eds) An atlas of Queensland's frogs,

TABLE 1. Conservation status and description of Regional Ecosystems at *D. torquata* locations. Regional Ecosystem numbers and edited descriptions are derived from Young (1999) and Young et al. (1999).

Site	Regional Ecosystem	Extent reserved	Extent remaining	Conservation status
Blackdown Tableland NP	not described			
Bullyard Conservation Park	*Corymbia citriodora* ± *Eucalyptus acmenoides* ± *C.intermedia, E. fibrosa* subsp. *fibrosa, C. trachyphloia, E. moluccana* (lower slopes), *E. crebra, E. exserta* tall woodland on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks	Low	71%	
Grongah SF	*Eucalyptus crebra* grassy woodland on Mesozoic to Proterozoic igneous rocks (12.12.7).	Low	26%	Vulnerable
Bunya Mts SF	*Eucalyptus tereticornis* open forest to woodland on Cainozoic alluvial plains including older floodplain complexes. (12.3.3)	Low	10%	Vulnerable
Yarraman SF	not described			
Western Creek SF	Acacia harpophylla A Casuarina cristata shrubby open forest on Cainozoic to Proterozoic consolidated, fine grained sediment. Lowlands. Deep texture contrast soils and cracking clays, often gilgaied. (11.9.5).	Low	~11%	Endangered

reptiles, birds and mammals. (Queensland Museum: Brisbane).

McFARLAND, D. 1999. Forest Vertebrate Fauna Study for a Comprehensive Regional Assessment in South-east Queensland. Stage IIA: Analysis and Reserve Option Example. Attachment:- Species Summaries. Report to the Queensland CRA/RFA Steering Committee by the Department of Environment, Brisbane.

NATURE CONSERVATION (WILDLIFE) REGULATION 1994. Queensland Subordinate Legislation 1991 No. 474, Nature Conservation Act 1992.

PORTER, R. 1998. Observations on a large population of the vulnerable Pygopodid, *D. torquata*. Memoirs of the Queensland Museum. 42(2): 565-572.

WILSON, S.K. & KNOWLES, D.G. 1988. Australia's Reptiles: A Photographic Reference to the Terrestrial Reptiles of Australia. (Collins: Sydney).

YOUNG, P.A.R. 1999. Chapter 12, Southeast Queensland. In Sattler, P.S. & Williams, R.D. (eds) The conservation status of Queensland's bioregional ecosystems. Conservation Technical Report. (Queensland Department of Environment and Heritage: Brisbane).

YOUNG, P.A.R., WILSON, B.A., McCOSKER, J.C., FENSHAM, R.J., MORGAN, G. & TAYLOR, P.M. 1999. Chapter 11. Brigalow Belt. In Sattler, P.S. & Williams, R.D. (eds) The conservation status of Queensland's bioregional ecosystems. Conservation Technical Report. (Queensland Department of Environment and Heritage: Brisbane).